

## Project Scope

The City developed its first bikeway master plan in 1996. It established the types of bikeway facilities that should be implemented within the City and identified the need to integrate with the existing system of regional bikeways in the San Diego metropolitan area. This original master plan was replaced by one prepared by KTU+A Planning + Landscape Architecture, adopted in January 2005. In December 2005 the Chula Vista City Council then approved a General Plan Update that emphasized an Urban Core area with commensurate land use changes, primarily in northwest Chula Vista.

This study is an update of the 2005 Bikeway Master Plan intended to fulfill project scope requirements and to maintain City of Chula Vista compliance with California Streets and Highways Code, Section 891.2 requirements for bicycle transportation plans.

By law, cities are to adopt their bikeway master plans (termed “Bicycle Transportation Plans” by the California Department of Transportation (Caltrans)) no earlier than five years prior to July 1 of the fiscal year in which the state’s Bicycle Transportation Account (BTA) funds are to be granted. (For example: With the 2010/2011 fiscal year beginning on July 1, 2010, cities applying for 2010/2011 BTA funds must have a bikeway master plan adopted January 1, 2005 or later.) This five year cycle is intended to make certain that Chula Vista’s 2005 General Plan changes affecting bicycle transportation will be accommodated in a timely manner.

This bikeway master plan’s recommendations are based on the best practices employed by other cities around the country and are in accordance with the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities and the Manual of Uniform Traffic Control Devices (MUTCD). This document also satisfies the requirements of the California Bicycle Transportation Act (BTA; 1994) which, upon approval by Caltrans, maintains the City of Chula Vista’s eligibility for state bicycle funding.

## Project Study Area

The project study area was the City of Chula Vista and its planning sphere of influence of the surrounding communities and unincorporated County areas. Adjoining areas’ bicycle systems were evaluated for opportunities as connections with Chula Vista’s and to extend the regional network via Chula Vista’s bikeway system. (See Figure 1: Existing Bicycle Facilities.)



## Project Approach and Goals

The overall approach for this master plan is summarized in the following paragraphs. The approaches listed below also constitute the planning goals for this study.

- The bicycle master plan should be integrated into all transportation plans, especially if the proposed bicycle facilities will use general purpose roads shared with other forms of transportation. The planning efforts should include the integration of various modes of transportation including transfers between modes at transit centers and park and ride facilities.
- The aim of planning for bicycles should not be focused on any particular facility type so much as it should be focused on the safe and efficient travel of cyclists. This will generally require both the use of the existing transportation infrastructure and the construction of special facilities for cyclists.
- The maintenance of bicycle facilities and the monitoring and assessment of their performance are critical for ensuring safe and efficient travel for cyclists. Planning for cyclists is an ongoing process.
- The coexistence of cyclists and drivers on roads requires that both are sensitive to and recognize a common set of rules. Training, education and enforcement are as important as physical planning and design.
- It is imperative that a “bicycle perspective” guides any planning for cyclists. The bicycle has its own characteristics, constraints and opportunities that the planner must consider. This must be combined with the recognition that cyclists do not form a homogeneous group in terms of age, ability, experience or traffic judgment.
- An integration of land use planning and transportation planning is needed to support future projects that are not intensively dependent on the automobile. This study needs to take into account future land use and population projections and provide bicycle facilities to help decrease auto dependence.

## Existing Bicycle Facilities

Prior to commencing field work, bicycle-related collision, speed limits and average daily trip (ADT) data were collected and analyzed to highlight roadways and areas that need further attention. Based on this analysis, as well as input from City staff and the public, some streets that do not have existing bicycle facilities were also reviewed as possible facilities and as connections. Table ES-1 shows the extent of existing facilities within the City and how facilities have been added over the past five years since the previous Bikeway Master Plan update.

**Table ES-1: Existing Bicycle Facilities**

Facilities	Total Existing in 2010 (Miles)	Planned in 2005	Implemented since 2005	% of 2005 Plan Implemented
Class 1 Bike Path	5.9	1.85	0.24	13%
Class 2 Bike Lanes	73.4	9.27	4.83	52%
Class 3 Bike Routes	33.8	2.81	1.19	42%
<b>Total</b>	<b>113.1</b>	<b>13.93</b>	<b>6.26</b>	<b>45%</b>

Other analyses included a bicycle suitability model, population and employment density and land use. Detailed existing bicycle facilities maps can be found in Chapter 1 and recommended bicycle facilities can be found in Chapter 4. Other existing conditions maps can be found in Chapter 3.

## Proposed Projects and Funding

The proposed system includes a total of approximately 48 miles of new bikeway facilities in addition to the 113 miles currently in place. Table ES-2 shows the number of existing and proposed miles for each bikeway classification.

**Table ES-2: Recommended Bicycle Facilities**

Facilities	Existing	Proposed	Total
Class 1 Bike Path	5.9	6.7	12.6
Class 2 Bike Lanes	73.4	10.5	84.6
Class 3 Bike Routes	33.8	33.4	67.2
<b>Total</b>	<b>113.1</b>	<b>51.4</b>	<b>164.5</b>

A summary of system costs for each bikeway classification is presented in Table ES-3. Detailed cost estimates can be found in Appendix B.

**Table ES-3: Summary of Costs**

Facilities	Cost	Typical Cost/Mile
Class 1 Bike Path	\$6,238,353	\$900,000
Class 2 Bike Lanes	\$2,741,547	\$30,000
Class 3 Bike Routes	\$266,845	\$8,000
<b>Total</b>	<b>\$9,246,745</b>	

## Significant Findings and Recommendations

Chula Vista deserves the distinctions of having implemented a significantly higher percentage of recommended projects from its previous bikeway master plan than any other city in San Diego County (See Table ES-1). Like many updates, the majority of proposed facilities tend to fill gaps in the existing bikeway system. Since this was an update, the intent was to complete facilities so that cyclists can expect more consistent, and therefore safer, conditions. However, this update differs from the previous master plan in recommending many more additional “intangible” improvements, particularly programs and policies related to education, encouragement, enforcement, evaluation and planning. In conjunction with the City’s considerable existing cycling infrastructure, these programs and policies are intended to persuade more people to ride their bikes to get around Chula Vista instead of automatically reaching for their car keys.

### Topography and Development Pattern

The older, more level western area of Chula Vista (generally west of Interstate 805) is well served by numerous Class 3 routes, allowing cyclists to access most desired destinations via multiple routes. The traditional grid pattern of relatively narrow streets effectively disperses traffic. Because these streets are relatively narrow based on current standards, Class 2 lanes are generally not recommended. This is due to the costly measures that would be needed to widen existing roadways to allow Class 2 lanes and the ensuing parking and access disruptions for local residents and businesses. The prevalence of Class 3 routes

still serves to satisfy cyclist demand in western Chula Vista and is generally in keeping with existing use levels and historic development pattern. If cycling demand increases in the future, the existing bikeway system configuration will need to be reevaluated.

On the other hand, the major roadways within newer eastern area of Chula Vista (generally east of Interstate 805) reflect current street standards and, as part of City policy, routinely incorporate Class 2 bike lanes. However, primarily due to this conventional development pattern, these bike lanes are commonly on roadways with much higher levels of motor vehicle traffic and higher posted speed limits than in the western part of Chula Vista. This means that though cyclists have wider, more visible facilities, they share the roadways with more and faster moving motor vehicles.

This dilemma is common to recently developed cities laid out in a conventional suburban pattern. Even though this appears to reflect suburban development as commonly employed across the country, in eastern Chula Vista this pattern was not arbitrarily imposed on the land, but was driven by local topography. In eastern Chula Vista's case, major arterials follow the east-west ridge lines and the connecting side streets were laid out in relation to the local topography, which limits the number of feasible arterial connections.

Eastern Chula Vista also has much more significant grades, particularly in the north-south direction. This local topography requires cyclists to ride up and down fairly steep and often long grades. In many cases, these north-south grades are steep enough to discourage casual cyclists and less hilly alternate routes are generally not readily available.

## **Education**

Even though the two distinctive major areas of Chula Vista have their disadvantages for cyclists, the tighter roadway widths in the west and the higher motor vehicle volumes and speeds in the east can be mitigated somewhat with education for all roadway users. Some cyclists feel that motorists are generally not aware of and do not respect cyclists' rights to use the roadways. Motorists counter that they frequently see cyclists disobeying basic traffic rules, especially riding the wrong way and failing to obey stop signs and traffic signals.

Education can alleviate much of this misunderstanding, especially if exposure occurs early in life. However, expanding an educational program may be difficult to accomplish in the near future, considering the low percentage of children who ride bicycles to and from school. Some schools do not even allow students to ride their bicycles to school.

## **Connectivity Issues**

Within Chula Vista, the interstate highways create connectivity problems for cyclists, especially where they must cross at conventional interchanges without bikeway facilities. Few interchanges have Class 2 bike lanes and some are not even designated as Class 3 routes. The roadway within the freeway shadow is often a gap in otherwise consistent bikeway facilities. Without bicycle lane striping and signage, for instance, cyclists feel less secure making the passage under or over a freeway. These important visual cues also serve to remind motorists to be aware of cyclists. These freeway interchanges are where motorists especially need reminding because so many turning and lane changing movements occur there. "Enhanced" fully painted bike lanes may be recommended at such locations because they have been shown to promote safety by heightening motorist awareness of the presence of cyclists through improved bikeway facility visibility. Caltrans Deputy Directive 64-R1 (See Appendix E) outlines state policy for accommodating non-motorized transportation modes such as bicycles and the City should work with Caltrans to implement Class 2 bike lanes at all freeway crossings.



## Integration with Greenbelt System

Chula Vista is relatively geographically isolated from adjoining communities due to its location between river valleys to the north and south and San Diego Bay to the west. Completion of the Bayshore Bikeway and future connections to the Sweetwater River Bikeway will improve regional access, but integration of the bikeway system with the proposed greenbelt system deserves further study. Though these trails are intended primarily for recreational use and are unlikely to be paved to the standards of a Class 1 bikeway facility, they will probably receive significant bicycle use. This is because the majority of bicycles in use today are “mountain bikes” designed for off-road use or are derivatives of the mountain bike that retain the elements that made them so popular. This category of bikes has been coined “comfort bikes” and their percentage of bicycle sales continues to increase, even as overall bicycle sales lag from a turn-of-the-century peak.

Not surprisingly, many of these comfort bike buyers are novices who will find riding on wide, relatively flat trails through open space without the constant presence of motor vehicles very attractive. The ability to circumnavigate the entire City without having to ride on streets will draw cyclists of all skill levels and will encourage others to try cycling. In other words, build it and they will come.

Even though the proposed greenbelt trail system will be designed as a recreational asset, it should be integrally linked with the bikeway system. Its extent and shallow grades are likely to make it a popular commuting route. Confronted with making the daily commute on high volume, high speed arterials, some with significant grades, these relatively flat non-motorized trails through open space will be an attractive option for experienced commuting cyclists as well.

## Applicable Legislation

Reduced greenhouse gas (GHG) emissions, energy efficiency and reduced traffic fatalities and injuries are significant benefits attributable to cycling. It will be especially difficult to reach State of California GHG reduction targets for transportation without increasing the amount of cycling. The future impact of several recent legislative acts may therefore be enhanced by the implementation of effective bikeway master plans.

Replacing one percent of vehicle trips with bicycle trips in San Diego County would reduce vehicle miles traveled by 229,525 miles per year, as well as reduce smog-forming gases by 0.31 tons/day, particulates by 0.06 tons/day and carbon monoxide by 1.74 tons/day.

Source: California Environmental Protection Agency – Air Resources Board

### Assembly Bill 32 - Global Warming Solutions Act

AB 32 calls for the reduction of greenhouse gas emissions and sets the 2020 emissions reduction goal into law. This act also directs the California Air Resources Board to develop specific early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit.

### Senate Bill 375 - Redesigning Communities to Reduce Greenhouse Gases

This bill seeks to reduce vehicle miles traveled through land use and planning incentives. Key provisions require the larger regional transportation planning agencies to develop more sophisticated transportation planning models, and to use them for the purpose of creating “preferred growth scenarios” in their regional plans that limit greenhouse gas emissions. The bill also provides incentives for local governments to incorporate these preferred growth scenarios into the transportation elements of their general land use plans.

## Assembly Bill 1358 - Complete Streets Act

AB 1358 requires the legislative body of a city or county, upon revision of the circulation element of their general plan, to identify how the jurisdiction will provide for the routine accommodation of all users of the roadway including motorists, pedestrians, cyclists, individuals with disabilities, seniors, and users of public transportation. The bill also directs the Office of Planning and Research to amend guidelines for the development of general plan circulation elements so that the building and operation of local transportation facilities safely and conveniently accommodate everyone, regardless of their mode of travel.

## The Future of Cycling

Societal attitudes seem to be at least partly to blame for the trend toward children's inability to get recommended levels of exercise. The number of children riding bikes to school is very low. The Chula Vista Police Department has held bicycle rodeos in the past as a way to educate children about safe and effective cycling, but the program requires grant funding to be resurrected. Some school administrators say this trend toward reduced physical activity is driven primarily by parents' fear of letting their children out of their sight, even briefly, and a widely held belief that cycling is inherently dangerous. Even after getting home from school, many children play indoors at activities that do not benefit bodily health.

The Safe Routes to School Program may offer some answers to encourage more children to ride and more parents to let them ([www.4saferoutes.org](http://www.4saferoutes.org)). The goal of the program is to build a physical environment and encourage a social climate that supports California children's ability to walk or bicycle safely to school. This is likely to reduce childhood injury, obesity, respiratory illness and the risk of later cardiovascular disease. Getting around under one's own power is also a way for children to better connect with their communities and their natural environment and to nurture self-reliance.

School administrators will benefit from fewer vehicles congesting school pick-up and drop-off points. Encouraging a reduced dependence on motor vehicles early in life should help young people to regain the level of activity that was once common, that today's adults grew up with and is still considered essential for health. Creating an environment where riding a bike is once again considered normal and safe can only help. That, in a nutshell, is the overall goal of this plan.

